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ABSTRACT

Revised forecasts for enrollments for 1985-1995 for Texas higher education institutions are presented. After a brief narrative overview of trends, statistical tables are presented, including the following: enrollment forecasts for higher education in the state, enrollment forecasts and changes for public senior institutions, headcount enrollment, population trends statewide and in Harris County, enrollment rates for Harris County, the ratio of total to in-state enrollment for 1983, and community college enrollments. Enrollment forecasts for 1985, 1990, and 1995 are provided by type of institution and for the 37 public universities. Trends include the following: an annual average growth rate of about 1 percent is expected for higher education institutions; public community colleges are expected to grow at a slightly faster rate than the public universities during 1983-1990; between 1985 and 1990 the number of persons in the age cohort 15 to 29 will increase by only 1.12 percent, compared to an overall population increase of more than 11 percent; and the 20-24 year age cohort will actually decline in number, while the population aged 35 and over will continue to grow. Information is included on the enrollment forecasting procedures. (SW)

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Enrollment Forecasts 1985-95

Texas Institutions of Higher Education

Study Paper 27

REVISED JANUARY 1984

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FOREWORD

Substantial enrollment increases have occurred in Texas colleges and universities in the past two years. The base-line enrollment from which new forecasts are made is higher than previously anticipated, and the forecasts made in 1982 now appear overly conservative. In addition, new enrollment trends are emerging at individual senior colleges and universities. Some institutions for the first time are implementing enrollment management policies specifically aimed at controlling growth. At other institutions, including some which have lost enrollment, aggressive plans to attract new students have met with success. These schools also are acquiring students denied admission elsewhere due to enrollment controls.

The forecasts presented in this report have been updated in consideration of these developments. The revised forecasts are higher than those made two years ago, primarily because they begin from a higher base line. Future changes, however, remain controlled by population forecasts and demographic trends, as well as local admissions and recruitment policies.

In April 1978, the Coordinating Board published Study Paper 27, the first in the current series of enrollment forecasts for Texas colleges and universities. Revised fall headcount enrollment forecasts were adopted in 1980 and 1982. The forecast adopted in July 1982 was based on actual statewide enrollment patterns from 1976 to 1981. During this period, the average annual increase in statewide enrollments in public universities was approximately 1.7 percent; in public community colleges the increase was 4.4 percent. However, in 1982 and 1983 enrollment at public universities increased by approximately 4 percent each year. The increases for public community colleges were 6.9 percent in 1982 and 6 percent in 1983.

Enrollments historically have expanded in times of increasing unemployment and economic recessions. Consequently, as the economy improves enrollment increases are not expected to continue at the same magnitude as that of the past two years. Therefore, the rates of change in enrollment from 1985 to 1990 and from 1990 to 1995 are not expected to be substantially different from those proposed in 1982.

The forecasting methodology has not significantly changed. Improvements have been made in the population projections and new census information and analyses by other state agencies have been used to reexamine and modify population projections in several counties. Also, more attention has been given to individual institutions to identify unique factors influencing enrollment changes.

Kenneth H. Ashworth
Commissioner of Higher Education

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ENROLLMENT IN TEXAS COLLEGES AND UNIVERSITIES TO 1995

By the year 1990 Texas institutions of higher education are projected to have a combined enrollment of more than 850,000. The annual average growth rate of approximately 1 percent is considerably lower than the 6 percent growth rate during the 1970s and early 1980s. Yet the steady gain for most Texas colleges and universities places them in a more favorable situation than institutions nationwide, which are expected to maintain relatively level enrollments throughout the 1980s.

Public community colleges are predicted to grow at a slightly faster rate than the public universities between 1983 and 1990. During this period, the universities are projected to enroll about 26,000 additional students, while public community colleges enrollments increase by almost 29,000 students. From 1990 to 1995, however aggregate enrollments for both types of institutions are projected to grow at an annual rate of about 1 percent. Total enrollment in the universities is projected to reach about 408,500, with community colleges having an enrollment of almost 347,000.

Anticipated changes in the state's demographic structure and the age distribution of the students are likely to strongly influence the growth patterns of all institutions of higher education. Three age groups--15-19, 20-24, and 25-29--constitute approximately 32 percent of the enrollment in public universities and 71 percent of the enrollment in public community colleges. This pool of traditional college-aged students is diminishing in respect to other age groups.

Between 1985 and 1990 the number of persons in the age cohort 15 to 29 will increase by only 1.12 percent, compared to an overall population increase of more than 11 percent; the 20-24 year age cohort will actually decline in number. Population decreased for the 25-29 and 30-34 year age cohorts will continue into the 1990-1995 period, but those declines will be compensated for by increases in the younger age categories. In addition, there will be a continuation of growth in the population aged 35 and over. The participation of this older age group in higher education is becoming increasingly more significant.

Enrollment forecasts for 1985, 1990 and 1995 by type of institutions are shown in Table 1. Tables 2 and 3 show enrollment forecasts and magnitude of change for the 37 public universities. The following points should be kept in mind when the forecasts are interpreted.

- the forecasts model is strongly influenced by historical patterns of attendance at each institution and projected population changes by county. Hence, to the extent that an institution is successful in modifying its drawing patterns, that alternative population concentrations develop or that institutions impose effective enrollment limitations these forecasts may not reflect accurately actual future enrollments;

- these forecasts assume that no new public universities will be built;

- enrollments will be affected by the state of the Texas economy. As has been vividly demonstrated during the past two years enrollments historically have expanded in times of increasing unemployment, in part because students want to prepare for better jobs. But the availability of government entitlements--VA benefits, Social Security college benefits, government basic grants and even loans, among others-- also cause students to enter or return to college;

- changes made or proposed in federal programs may seriously affect decisions on whether to return to college. For example, if loan programs become restricted or much more costly to students, enrollments could be further depressed.

Information on enrollments in higher education is fundamental to long-range planning by the Legislature, the Governor's Office, the Coordinating Board, and each of the Texas colleges and universities. Enrollments affect financing plans, proposed construction, staffing and faculty recruitment, and other fundamental issues in higher education all the way from the campus setting to the highest policy-making offices in the state.

A more detailed summary of the procedures used to obtain the enrollment forecasts presented in Table 1 and Table 2 is contained in the section following the tables.

Table 1
TEXAS INSTITUTIONS OF HIGHER EDUCATION
FALL HEADCOUNT ENROLLMENT FORECAST

Type of Institution	Actual 1980	1981	1982	* 1983	Forecast 1985	1990	1995
Public Universities	339,053	342,130	355,709	369,372	380,586	395,357	408,595
Public Community Junior Colleges	251,076	261,075	289,363	306,597	315,579	335,463	346,979
Independent Senior Colleges and Universities	76,586	78,386	79,199	79,154	82,024	83,695	85,971
Independent Junior Colleges	1,934	1,806	1,266	1,394	1,367	1,330	1,253
Texas State Technical Institute	6,783	7,448	9,021	8,748	9,720	10,821	12,008
TOTAL, All Institutions	675,432	690,845	734,558	765,265	789,276	826,666	854,806

FORECASTED CHANGES IN
FALL HEADCOUNT ENROLLMENT

Type of Institution	1980-85 Number	Percent	1985-90 Number	Percent	1990-95 Number	Percent	1980-90 Number	Percent
Public Universities	41,533	12.24	14,771	3.88	13,238	3.34	56,304	16.60
Public Community Junior Colleges	64,503	25.69	19,884	6.30	11,516	3.43	84,387	33.61
Independent Senior Colleges and Universities	5,438	7.10	1,671	2.04	2,276	2.72	7,109	9.28
Independent Junior Colleges	-567	-29.32	-37	-2.71	-77	-5.79	-604	-31.23
Texas State Technical Institute	2,937	43.30	1,101	11.33	1,187	10.97	4,038	59.53
TOTAL Change, All Institutions	113,844	16.85	37,390	4.73	28,140	3.40	151,234	22.39

* 1983 Enrollment is Preliminary

Table 2
FALL HEADCOUNT ENROLLMENT FORECAST
TEXAS PUBLIC SENIOR COLLEGES AND UNIVERSITIES

Institution	Actual 1980	1981	1982	* 1983	Forecast 1985	1990	1995
Public Senior Colleges and Universities	339,053	342,130	355,709	369,372	380,586	395,357	408,595
Angelo State University	5,705	5,600	5,834	6,345	6,754	7,015	7,358
Corpus Christi State University	2,748	2,847	3,240	3,567	3,874	3,945	3,933
East Texas State University	8,322	7,867	7,760	7,578	7,784	8,059	8,367
ETSU at Texarkana	1,246	1,116	1,138	1,112	1,153	1,147	1,149
Lamar University	11,511	11,791	12,372	13,274	13,692	12,790	12,716
Lamar University at Orange	961	880	975	1,064	1,058	1,057	1,050
Lamar University at Port Arthur	1,054	1,053	1,221	1,433	1,508	1,460	1,440
Laredo State University	816	770	900	932	1,007	1,132	1,264
Midwestern State University	4,336	4,522	4,731	5,033	5,283	5,121	5,008
North Texas State University	17,158	17,487	18,782	20,368	21,668	22,880	23,845
Pan American University	8,358	8,065	7,953	8,594	8,770	9,853	11,432
Pan American University at Brownsville	1,146	1,036	974	1,079	1,178	1,287	1,516
Prairie View A&M University	5,511	4,529	4,495	4,425	4,497	4,560	4,798
Sam Houston State University	10,601	10,290	10,470	10,580	10,840	11,332	12,233
Southwest Texas State University	15,400	15,277	16,386	18,317	19,759	20,332	21,748

* 1983 Enrollment is Preliminary.

Table 2 (Continued)
FALL HEADCOUNT ENROLLMENT FORECAST
TEXAS PUBLIC SENIOR COLLEGES AND UNIVERSITIES

Institution	Actual 1980	1981	1982	* 1983	Forecast 1985	1990	1995
Stephen F. Austin State University	10,772	10,818	11,868	12,446	13,106	13,133	13,886
Sul Ross State University	1,641	1,563	1,840	1,917	1,905	1,900	1,915
Sul Ross State U. Uvalde Center	502	484	473	531	552	582	615
Tarleton State University	3,592	3,728	4,321	4,606	4,653	5,009	5,425
Texas A&I University	5,355	5,125	5,245	5,524	5,561	5,579	5,704
Texas A&M University	33,370	35,022	35,995	36,846	37,412	38,025	39,860
Texas A&M at Galveston	593	575	590	554	565	557	577
Texas Southern Universtiy	8,015	8,160	8,282	8,881	9,222	9,634	9,983
Texas Tech University	23,034	22,954	22,841	23,755	24,166	24,158	24,103
Texas Woman's University	7,872	7,477	7,720	8,453	8,490	9,341	9,857
The University of Texas at Arlington	20,166	20,952	22,171	23,172	25,267	25,517	25,734
The University of Texas at Austin	46,148	48,145	48,039	47,573	45,200	49,100	49,100
The University of Texas at Dallas	6,368	6,904	7,376	7,456	7,830	8,551	8,695
The University of Texas at El Paso	15,750	15,436	15,129	15,241	15,490	16,395	17,168
The University of Texas of the Permian Basin	1,578	1,640	1,825	1,975	2,055	2,062	2,079
The University of Texas at San Antonio	9,831	10,562	11,145	11,890	13,103	13,793	14,398
The University of Texas at Tyler	1,921	1,955	2,623	3,148	3,329	3,533	3,737

* 1983 Enrollment is Preliminary

Table 2 (Continued)
FALL HEADCOUNT ENROLLMENT FORECAST
TEXAS PUBLIC SENIOR COLLEGES AND UNIVERSITIES

Institution	Actual 1980	1981	1982	* 1983	Forecast 1985	1990	1995
University of Houston - University Park	29,676	28,295	30,545	31,114	32,522	34,246	35,014
University of Houston - Clear Lake	5,592	6,014	6,580	6,498	6,886	7,692	7,955
University of Houston - Downtown	5,055	5,766	6,353	6,330	6,585	6,844	7,082
University of Houston - Victoria	790	732	801	938	981	1,001	1,027
West Texas State University	6,559	6,693	6,805	6,823	6,881	6,735	6,824

* 1983 Enrollment is Preliminary.

Table 3
FALL HEADCOUNT ENROLLMENT CHANGES
TEXAS PUBLIC SENIOR COLLEGES AND UNIVERSITIES

Institution	1980-85 Number	1980-85 Percent	1985-90 Number	1985-90 Percent	1990-95 Number	1990-95 Percent	1980-90 Number	1980-90 Percent
Change All Public Senior Colleges and Universities	41,533	12.24	14,771	3.88	13,238	3.34	56,304	16.60
Angelo State University	1,049	18.39	261	3.86	343	4.89	1,310	22.96
Corpus Christi State University	1,126	40.97	71	1.83	-12	-0.30	1,197	43.55
East Texas State University	-538	-6.46	275	3.53	308	3.82	-263	-3.16
ETSU at Texarkana	-93	-7.46	-6	-0.52	2	0.17	-99	-7.95
Lamar University	2,181	18.95	-902	-6.59	-74	-0.58	1,279	11.11
Lamar University at Orange	97	10.09	-1	-0.10	-7	-0.66	96	9.99
Lamar University at Port Arthur	454	43.07	-48	-3.18	-20	-1.36	406	38.51
Laredo State University	191	23.41	125	12.41	132	11.66	316	38.73
Midwestern State University	947	21.84	-162	-3.06	-113	-2.20	785	18.10
North Texas State University	4,510	26.28	1,212	5.59	965	4.21	5,722	33.34
Pan American University	412	4.93	1,083	12.35	1,579	16.03	1,495	17.89
Pan American University at Brownsville	32	2.79	109	9.25	229	17.79	141	12.30
Prairie View A&M University	-1,014	-18.40	63	1.40	238	5.04	-951	-17.26
Sam Houston State University	239	2.26	492	4.54	901	7.95	731	6.90
Southwest Texas State University	4,359	28.30	573	2.89	1,416	6.96	4,932	32.02

Table 3 (Continued)
FALL HEADCOUNT ENROLLMENT CHANGES
TEXAS PUBLIC SENIOR COLLEGES AND UNIVERSITIES

Institution	1980-85 Number	1980-85 Percent	1985-90 Number	1985-90 Percent	1990-95 Number	1990-95 Percent	1980-90 Number	1980-90 Percent
Stephen F. Austin State University	2,334	21.66	27	0.20	753	5.73	2,361	21.91
Sul Ross State University	264	16.09	-5	-0.26	15	0.79	259	15.78
Sul Ross State U. Uvalde Center	50	9.96	30	5.43	33	5.67	80	15.94
Tarleton State University	1,061	29.54	356	7.65	416	8.31	1,417	39.45
Texas A&I University	206	3.85	18	0.32	125	2.24	224	4.18
Texas A&M University	4,042	12.11	613	1.64	1,835	4.83	4,655	13.95
Texas A&M at Galveston	-28	-4.72	-8	-1.42	20	3.59	-36	-6.07
Texas Southern Universtiy	1,207	15.06	412	4.47	349	3.62	1,619	20.20
Texas Tech University	1,132	4.91	-8	-0.03	-55	-0.23	1,124	4.88
Texas Woman's University	618	7.85	851	10.02	516	5.52	1,469	18.66
The University of Texas at Arlington	5,101	25.30	250	0.99	217	0.85	5,351	26.54
The University of Texas at Austin	-948	-2.05	3,900	8.62	0	0.00	2,952	6.39
The University of Texas at Dallas	1,462	22.96	721	9.21	144	1.68	2,183	34.28
The University of Texas at El Paso	-260	1.65	905	5.84	773	4.72	645	4.10
The University of Texas of the Permian Basin	477	30.23	7	0.34	17	0.82	484	30.67
The University of Texas at San Antonio	3,272	33.28	690	5.27	605	4.39	3,962	40.30
The University of Texas at Tyler	1,408	73.30	204	6.12	204	5.77	1,612	83.91

Table 3 (Continued)
FALL HEADCOUNT ENROLLMENT CHANGES
TEXAS PUBLIC SENIOR COLLEGES AND UNIVERSITIES

Institution	1980-85 Number	1980-85 Percent	1985-90 Number	1985-90 Percent	1990-95 Number	1990-95 Percent	1980-90 Number	1980-90 Percent
University of Houston - University Park	2,846	9.59	1,724	5.30	768	2.24	4,570	15.40
University of Houston - Clear Lake	1,294	23.14	806	11.71	263	3.42	2,100	37.55
University of Houston - Downtown	1,530	30.27	259	3.93	238	3.48	1,789	35.39
University of Houston - Victoria	191	24.18	20	2.04	26	2.60	211	26.71
West Texas State University	322	4.91	-146	-2.12	89	1.32	176	2.68

DESCRIPTION OF FORECASTING PROCEDURES

PUBLIC SENIOR COLLEGE AND UNIVERSITY FORECASTS:

CONCEPT: Enrollment forecasts were made for each of the 37 public senior colleges and universities. Aggregate enrollment for all senior institutions was determined by summing institutions' enrollments. All enrollment forecasts and the base data were for fall headcount enrollment. The forecast methodology employed five years of historical enrollments combined with demographic data. In general, the forecast procedure followed these steps:

a. five-year (1978-1982) historical enrollments were used to develop three alternative, age specific, enrollment rates in each of the 254 counties. These alternative rates were based on 1980 enrollment, 1982 enrollment and the five-year trend enrollment;

b. alternative in-state enrollment forecasts were made using these enrollment rates and age specific population projections by county;

c. ratios between in-state enrollment and total enrollment (in-state plus out-of-state and foreign) were computed for 1980, 1982 and the five-year trend;

d. trial total enrollment forecasts for 1983 were computed using in-state enrollment produced by the alternative rates (steps a and b) and the alternative enrollment ratios (step c). These trial forecasts were compared with historical patterns and with actual 1983 enrollment to select the "best fit" alternative;

e. enrollment rates and ratios associated with the selected alternative were applied to county age population projections for 1985, 1990 and 1995 to obtain enrollment forecasts for those years.

HISTORICAL ENROLLMENT: An example of statewide enrollment data for all public universities is shown in Table 4. The same information was available for each of the 37 senior institutions and each of the 254 counties. Enrollment data for one county for the year 1982 are shown in Table 4A.

Table 4
Public Senior Fall Headcount Enrollment

Year	In-state Enrollment by Age Groups 15-19	20-24	25-29	30-34	35-up	15-up	Total* Enrollment
1978	78,161	124,600	43,575	23,894	27,627	297,856	328,817
1979	79,333	123,965	41,961	24,136	27,500	296,895	330,868
1980	80,277	126,105	42,400	24,549	28,737	302,068	339,053
1981	79,054	127,243	42,594	24,952	28,469	302,312	342,130
1982	79,278	131,663	44,179	25,282	31,381	311,783	356,203

* Includes in-state, foreign, and out-of-state students.

Table 4a
Fall Headcount Enrollment 1982: Harris County

SCHOOL NAME	AGE 15-19	AGE 20-24	AGE 25-29	AGE 30-34	AGE 35-39	AGE 40-UP	TOTAL
ETSU/TEXARKANA	0	0	1	0	0	0	1
LAMAR/ORANGE	0	1	0	0	0	0	1
LAMAR/PORT ARTHUR	0	1	0	0	0	1	2
ANGELO STATE U	17	18	0	0	2	0	37
EAST TEXAS STATE	29	38	12	2	4	6	91
LAMAR UNIVERSITY	312	257	18	7	3	7	604
MIDWESTERN STATE	4	14	2	3	0	0	23
NORTH TEXAS STATE	228	291	46	12	3	2	582
PAN AMERICAN U	5	11	2	0	0	0	18
SAM HOUSTON STATE	1,393	1,911	208	163	143	133	3,951
SOUTHWEST TX STATE	1,103	1,260	74	16	2	4	2,459
STEPHEN F AUSTIN	1,604	1,679	205	108	69	75	3,740
SUL ROSS STATE	23	28	2	2	0	0	55
PRAIRIE VIEW A&M	479	679	165	122	78	103	1,626
TARLETON STATE	18	15	1	1	0	0	35
TEXAS A&I UNIV	35	48	2	2	0	0	87
TEXAS SOUTHERN U	968	1,596	949	554	294	299	4,660
TEXAS TECH UNIV	428	476	23	5	4	0	936
TEXAS WOMAN'S UNIV	73	208	202	99	92	89	763
U HOUSTON/UNV PARK	2,537	8,125	5,818	2,951	1,363	1,183	21,977
U TEXAS ARLINGTON	33	61	15	10	1	2	122
UNIV TEXAS/AUSTIN	3,066	4,225	479	133	36	33	7,972
UNIV TEXAS/EL PASO	20	22	3	4	0	1	50
WEST TEXAS STATE	15	24	2	0	0	1	42
LAREDO STATE	0	0	1	2	0	0	3
UNIV TEXAS/DALLAS	0	4	5	2	2	0	13
UNIV TEXAS/PERMIAN	0	1	0	0	0	1	2
U TEX SAN ANTONIO	10	10	7	2	3	0	32
TAMU/GALVESTON	24	46	7	7	3	0	87
TEXAS A&M UNIV	3,007	3,828	299	93	44	51	7,322
CORPUS CHRISTI S U	0	7	2	1	1	0	11
U HOUSTON CLR LAKE	16	1,063	1,126	810	501	581	4,097
U HOUSTON/DOWNTOWN	989	1,892	1,063	526	247	245	4,962
U HOUSTON/VICTORIA	0	0	0	1	1	0	2
UNIV TEXAS/TYLER	0	3	0	0	0	0	3

TEXAS POPULATION: Population data consisted of the number of persons for each county and statewide by age groups. The actual census of the population was used for 1980. Other years were projected using a modified "cohort-migration-survival component" method. This procedure developed separate survival components for net migration and for mortality by age-sex cohorts. In general, the procedure was as follows:

a. The 1970 age-sex cohorts were survived to 1980 by applying a set of standard life table survival rates for the U.S. This computation produced "expected 1980 totals" for each age-sex cohort as if no migration had occurred.

b. Net migration in each county was assumed to be the difference between the "expected 1980 totals" and the actual 1980 totals as reported by the 1980 Census. From this information net migration rates were developed for the age-sex cohorts for each county. The assumption was made that the 1980-1990 rates would be 90 percent of those observed for 1970-1980.

c. Using the age-sex cohort survival rates and migration rates the population was projected to 1990 and 2000 for ages 10 years and older. Ages below 10 were projected by determining the child-woman (ages 15-49) ratio in 1980 and applying this ratio to the number of females aged 15-49 in 1990 and 2000.

d. Population for the years between 1980, 1990 and 2000 was determined by interpolation.

e. Projections for each county were examined for inconsistencies and compared with projections made by other state agencies. In some cases adjustments were made to arrive at more reasonable age distributions.

Statewide population data are shown below in Table 5. The same data were available at the county level for each of the 254 counties; Harris County population is shown in Table 5a.

Table 5
Texas Population (Statewide)

Year	Age 15-19	Age 20-24	Age 25-29	Age 30-34	Age 35-up	Age 15-up	Total Population
1980	1,352,355	1,420,358	1,302,054	1,124,483	5,511,003	10,710,253	14,229,191
1983	1,305,894	1,443,447	1,446,792	1,272,530	5,936,958	11,405,621	15,243,637
1985	1,274,507	1,461,041	1,543,206	1,370,323	6,275,631	11,924,708	15,919,955
1990	1,367,797	1,382,764	1,579,189	1,669,777	7,391,422	13,390,949	17,716,882
1995	1,453,646	1,444,806	1,476,660	1,628,800	8,817,250	14,821,162	19,371,150

Table 5a
Harris County Population

Year	Age 15-19	Age 20-24	Age 25-29	Age 30-34	Age 35-up	Age 15-up	All Ages
1980	211,886	258,861	272,373	227,133	841,785	1,812,038	2,409,547
1983	219,576	267,176	298,687	261,970	938,397	1,985,806	2,635,488
1985	224,703	272,719	316,230	285,195	1,002,805	2,101,652	2,786,116
1990	213,559	254,059	333,552	373,599	1,234,711	2,409,480	3,162,688
1995	248,741	262,829	298,236	340,907	1,500,176	2,650,889	3,496,397

ENROLLMENT RATES: The five-year (1978-82) in-state enrollment data base and the population data base were used to obtain enrollment rates by county and age groups for each public senior institution. Three alternative rates were calculated as follows:

1980 Rate: The number of students in a specific age group from each county attending each institution divided by the total number of people of the specific age group living in the county according to the 1980 Census.

1982 Rate: The number of students in a specific age group from each county attending each institution divided by the total number of people of the specific age group estimated for the county in 1982.

Trend Rate: Using five years of enrollment data (1978-82) the straight line arithmetic trend for 1983 enrollment was determined for each county and age group using the equation: $Y_c = a + bx$

where: a is the mean enrollment over the five-year period,

b is the deviation from the center year multiplied by the enrollment and divided by the sum of the squares of the deviations,

x = +3, the value of the deviation for the year 1983.

The predicted trend enrollment (Y_c) for 1983 was then divided by the total number of people of the specific age group projected for the county in 1983.

Examples of enrollment rates by public senior institutions are shown in Table 6 (1982 Rates) and Table 7 (Trend Rates). The tables show rates for Harris County only; however, rates were computed for all 254 Texas counties.

Table 6
Senior College Enrollment Rates (1982)
For Harris County

SCHOOL NAME	AGE 15-19	AGE 20-24	AGE 25-29	AGE 30-34	AGE 35-UP	AGE 15-UP
ETSU/TEXARKANA	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
LAMAR/ORANGE	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
LAMAR/PORT ARTHUR	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
ANGELO STATE U	0.00007	0.00006	0.00000	0.00000	0.00000	0.00001
EAST TEXAS STATE	0.00013	0.00014	0.00004	0.00000	0.00001	0.00004
LAMAR UNIVERSITY	0.00143	0.00097	0.00006	0.00002	0.00001	0.00031
MIDWESTERN STATE	0.00001	0.00005	0.00000	0.00001	0.00000	0.00001
NORTH TEXAS STATE	0.00105	0.00110	0.00015	0.00004	0.00000	0.00030
PAN AMERICAN U	0.00002	0.00004	0.00000	0.00000	0.00000	0.00000
SAM HOUSTON STATE	0.00641	0.00722	0.00071	0.00065	0.00030	0.00204
SOUTHWEST TX STATE	0.00508	0.00476	0.00025	0.00006	0.00000	0.00127
STEPHEN F AUSTIN	0.00739	0.00635	0.00070	0.00043	0.00015	0.00193
SUL ROSS STATE	0.00010	0.00010	0.00000	0.00000	0.00000	0.00002
PRAIRIE VIEW A&M	0.00220	0.00256	0.00056	0.00048	0.00019	0.00084
TARLETON STATE	0.00008	0.00005	0.00000	0.00000	0.00000	0.00001
TEXAS A&I UNIV	0.00016	0.00018	0.00000	0.00000	0.00000	0.00004
TEXAS SOUTHERN U	0.00446	0.00603	0.00327	0.00221	0.00065	0.00241
TEXAS TECH UNIV	0.00197	0.00180	0.00007	0.00001	0.00000	0.00048
TEXAS WOMAN'S UNIV	0.00033	0.00078	0.00069	0.00039	0.00019	0.00039
U HOUSTON/UNV PARK	0.01169	0.03072	0.02006	0.01178	0.00280	0.01139
U TEXAS ARLINGTON	0.00015	0.00023	0.00005	0.00003	0.00000	0.00006
UNIV TEXAS/AUSTIN	0.01412	0.01597	0.00165	0.00053	0.00007	0.00413
UNIV TEXAS/EL PASO	0.00009	0.00008	0.00001	0.00001	0.00000	0.00002
WEST TEXAS STATE	0.00006	0.00009	0.00000	0.00000	0.00000	0.00002
LAREDO STATE	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
UNIV TEXAS/DALLAS	0.00000	0.00001	0.00001	0.00000	0.00000	0.00000
UNIV TEXAS/PERMIAN	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
U TEX SAN ANTONIO	0.00004	0.00003	0.00002	0.00000	0.00000	0.00001
TAMU/GALVESTON	0.00011	0.00017	0.00002	0.00002	0.00000	0.00004
TEXAS A&M UNIV	0.01385	0.01447	0.00103	0.00037	0.00010	0.00379
CORPUS CHRISTI S U	0.00000	0.00002	0.00000	0.00000	0.00000	0.00000
U HOUSTON CLR LAKE	0.00007	0.00402	0.00388	0.00323	0.00119	0.00212
U HOUSTON/DOWNTOWN	0.00455	0.00715	0.00366	0.00210	0.00054	0.00257
U HOUSTON/VICTORIA	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
UNIV TEXAS/TYLER	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000

Table 7
Senior College Enrollment Rates (Trend)
For Harris County

SCHOOL NAME	AGE 15-19	AGE 20-24	AGE 25-29	AGE 30-34	AGE 35-UP	AGE 15-UP
ETSU/TEXARKANA	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
LAMAR/ORANGE	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
LAMAR/PORT ARTHUR	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
ANGELO STATE U	0.00008	0.00007	0.00000	0.00000	0.00000	0.00002
EAST TEXAS STATE	0.00011	0.00017	0.00004	0.00000	0.00001	0.00004
LAMAR UNIVERSITY	0.00158	0.00100	0.00002	0.00002	0.00000	0.00032
MIDWESTERN STATE	0.00001	0.00006	0.00000	0.00000	0.00000	0.00001
NORTH TEXAS STATE	0.00107	0.00110	0.00016	0.00004	0.00000	0.00030
PAN AMERICAN U	0.00002	0.00004	0.00000	0.00000	0.00000	0.00000
SAM HOUSTON STATE	0.00641	0.00749	0.00061	0.00052	0.00029	0.00201
SOUTHWEST TX STATE	0.00463	0.00497	0.00026	0.00006	0.00000	0.00123
STEPHEN F AUSTIN	0.00794	0.00675	0.00073	0.00043	0.00015	0.00202
SUL ROSS STATE	0.00008	0.00010	0.00000	0.00000	0.00000	0.00002
PRAIRIE VIEW A&M	0.00252	0.00256	0.00052	0.00047	0.00018	0.00085
TARLETON STATE	0.00009	0.00003	0.00000	0.00000	0.00000	0.00001
TEXAS A&I UNIV	0.00011	0.00020	0.00001	0.00000	0.00000	0.00004
TEXAS SOUTHERN U	0.00369	0.00552	0.00299	0.00197	0.00058	0.00213
TEXAS TECH UNIV	0.00180	0.00187	0.00007	0.00001	0.00000	0.00046
TEXAS WOMAN'S UNIV	0.00039	0.00048	0.00058	0.00039	0.00018	0.00033
U HOUSTON/UNV PARK	0.01101	0.02946	0.01957	0.01153	0.00276	0.01095
U TEXAS ARLINGTON	0.00014	0.00025	0.00005	0.00003	0.00000	0.00006
UNIV TEXAS/AUSTIN	0.01515	0.01655	0.00168	0.00057	0.00006	0.00426
UNIV TEXAS/EL PASO	0.00007	0.00009	0.00000	0.00001	0.00000	0.00002
WEST TEXAS STATE	0.00007	0.00010	0.00000	0.00000	0.00000	0.00002
LAREDO STATE	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000
UNIV TEXAS/DALLAS	0.00000	0.00002	0.00001	0.00001	0.00000	0.00000
UNIV TEXAS/PERMIAN	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
U TEX SAN ANTONIO	0.00004	0.00003	0.00002	0.00001	0.00000	0.00001
TAMU/GALVESTON	0.00006	0.00014	0.00001	0.00002	0.00000	0.00003
TEXAS A&M UNIV	0.01443	0.01477	0.00106	0.00037	0.00009	0.00383
CORPUS CHRISTI S U	0.00000	0.00002	0.00000	0.00000	0.00000	0.00000
U HOUSTON CLR LAKE	0.00007	0.00409	0.00382	0.00295	0.00111	0.00204
U HOUSTON/DOWNTOWN	0.00452	0.00760	0.00384	0.00215	0.00061	0.00267
U HOUSTON/VICTORIA	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
UNIV TEXAS/TYLER	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000

IN-STATE ENROLLMENT FORECAST: Enrollment rates previously computed and population projections were used to forecast in-state enrollment for each public senior institution as follows:

- The age specific enrollment rate for each county was multiplied by the corresponding age group population projected for each county. This produced the number of students by age and county expected to attend each institution. Age group enrollment forecasts for each institution were then summed by county (see Table 8 for an example).

- These county totals were summed to obtain overall in-state enrollment forecasts for each institution.

Three alternative in-state enrollment forecasts were produced--one for each of the enrollment rates. Overall 1983 in-state enrollment forecasts for each alternative are shown in Table 9.

RATIOS: IN-STATE ENROLLMENT TO TOTAL ENROLLMENT: Students who are residents of Texas account for approximately 89 percent of the total enrollment at the state's public senior colleges and universities. However, this ratio varies among institutions from an average high of 100 percent to a low of approximately 65 percent. Therefore, it was necessary to compute individual factors for each institution in order to account for out-of-state and foreign students. This was done by dividing total enrollment by in-state enrollment. The results are shown in Table 10 for each of the five years of historical enrollment, the five-year average and the five-year trend ratios.

TRIAL 1983 TOTAL ENROLLMENT FORECASTS: Alternative total enrollment forecasts for each institution were computed by multiplying different combinations of in-state enrollments (produced by the alternative rates) by the alternative ratios. A total of nine combinations were possible; five were selected for comparison with actual enrollments for fall 1983. Combinations which used 1980 rates and/or ratios were discarded because they were not representative of current enrollment patterns and were considered least likely to provide an accurate picture of future enrollments. The five selected alternatives are shown in Table 11.

Table 8
Forecast of Senior College Enrollment
From Harris County in 1983 Based on Trend Rates

SCHOOL NAME	AGE 15-19	AGE 20-24	AGE 25-29	AGE 30-34	AGE 35-UP	AGE 15 PLUS
ETSU/TEXARKANA	0	0	0	0	0	0
LAMAR/ORANGE	0	0	0	0	0	0
LAMAR/PORT ARTHUR	0	0	0	0	0	0
ANGELO STATE U	17	18	0	0	0	36
EAST TEXAS STATE	24	45	11	0	9	90
LAMAR UNIVERSITY	346	267	5	5	0	625
MIDWESTERN STATE	2	16	0	0	0	18
NORTH TEXAS STATE	234	293	47	10	0	587
PAN AMERICAN U	4	10	0	0	0	15
SAM HOUSTON STATE	1,407	2,001	182	136	272	3,999
SOUTHWEST TX STATE	1,016	1,327	77	15	0	2,437
STEPHEN F AUSTIN	1,743	1,803	218	112	140	4,018
SUL ROSS STATE	17	26	0	0	0	44
PRAIRIE VIEW A&M	553	683	155	123	168	1,684
TARLETON STATE	19	8	0	0	0	27
TEXAS A&I UNIV	24	53	2	0	0	80
TEXAS SOUTHERN U	810	1,474	893	516	544	4,238
TEXAS TECH UNIV	395	499	20	2	0	918
TEXAS WOMAN'S UNIV	85	128	173	102	168	658
U HOUSTON/UNV PARK	2,417	7,871	5,845	3,020	2,589	21,744
U TEXAS ARLINGTON	30	66	14	7	0	120
UNIV TEXAS/AUSTIN	3,326	4,421	501	149	56	8,455
UNIV TEXAS/EL PASO	15	24	0	2	0	42
WEST TEXAS STATE	15	26	0	0	0	42
LAREDO STATE	0	0	0	2	0	2
UNIV TEXAS/DALLAS	0	5	2	2	0	10
UNIV TEXAS/PERMIAN	0	0	0	0	0	0
U TEX SAN ANTONIO	8	8	5	2	0	25
TAMU/GALVESTON	13	37	2	5	0	58
TEXAS A&M UNIV	3,168	3,946	316	96	84	7,612
CORPUS CHRISTI S U	0	5	0	0	0	5
U HOUSTON CLR LAKE	15	1,092	1,140	772	1,041	4,063
U HOUSTON/DOWNTOWN	992	2,030	1,146	563	572	5,305
U HOUSTON/VICTORIA	0	0	0	0	0	0
UNIV TEXAS/TYLER	0	2	0	0	0	2
ALL INSTITUTIONS	16,731	28,240	10,797	5,684	5,742	67,197

Table 9
Senior College In-State Enrollment for 1983
Alternative Forecasts

SCHOOL NAME	ENROLLMENT 1980 RATE	ENROLLMENT 1982 RATE	ENROLLMENT TREND RATE
ETSU/TEXARKANA	1,001	871	908
LAMAR/ORANGE	936	953	946
PAU/BROWNSVILLE	1,310	1,001	939
SUL ROSS/UVALDE	535	479	457
LAMAR/PORT ARTHUR	967	1,139	1,197
ANGELO STATE U	5,397	5,526	5,688
EAST TEXAS STATE	8,069	7,237	6,692
LAMAR UNIVERSITY	10,377	11,239	11,593
MIDWESTERN STATE	3,740	4,216	4,287
NORTH TEXAS STATE	15,310	15,787	15,263
PAN AMERICAN U	9,103	7,949	7,781
SAM HOUSTON STATE	10,821	10,056	9,642
SOUTHWEST TX STATE	15,466	15,932	15,632
STEPHEN F AUSTIN	10,986	11,702	11,714
SUL ROSS STATE	1,461	1,625	1,630
PRAIRIE VIEW A&M	4,783	3,773	3,785
TARLETON STATE	3,468	3,987	4,032
TEXAS A&I UNIV	4,802	4,832	4,456
TEXAS SOUTHERN U	5,150	5,586	4,960
TEXAS TECH UNIV	20,685	20,165	20,359
TEXAS WOMAN'S UNIV	7,052	6,352	6,025
U HOUSTON/UNV PARK	27,800	26,813	25,533
U TEXAS ARLINGTON	18,166	19,143	19,820
UNIV TEXAS/AUSTIN	40,782	39,733	40,700
UNIV TEXAS/EL PASO	14,468	13,285	12,964
WEST TEXAS STATE	6,065	6,150	6,218
LAREDO STATE	852	816	764
UNIV TEXAS/DALLAS	6,011	6,569	6,838
UNIV TEXAS/PERMIAN	1,552	1,698	1,663
U TEX SAN ANTONIO	9,797	10,941	11,478
TAMU/GALVESTON	375	322	309
TEXAS A&M UNIV	29,565	30,400	31,254
CORPUS CHRISTI S U	2,820	3,218	3,187
U HOUSTON CLR LAKE	5,651	6,136	5,873
U HOUSTON/DOWNTOWN	4,911	5,283	5,577
U HOUSTON/VICTORIA	827	782	834
UNIV TEXAS/TYLER	2,039	2,635	2,459
YEAR 83 ENROLLMENT 1980 RATE	TOTAL:		313,099
YEAR 83 ENROLLMENT 1982 RATE	TOTAL:		314,331
YEAR 83 ENROLLMENT TREND RATE	TOTAL:		313,457

Table 10
Senior College Alternative Factors
(Ratio of Total to In-State Enrollment)

SCHOOL NAME	1978 RATIO	1979 RATIO	1980 RATIO	1981 RATIO	1982 RATIO	AVERAGE RATIO	TREND RATIO
ETSU/TEXARKANA	1.27	1.26	1.30	1.27	1.32	1.28	1.32
LAMAR/ORANGE	1.03	1.05	1.03	1.03	1.02	1.03	1.02
PAU/BROWNSVILLE	1.01	1.02	1.01	1.01	1.02	1.01	1.02
SUL ROSS/UVALDE	1.01	1.01	1.00	1.00	1.00	1.00	1.00
LAMAR/PORT ARTHUR	1.04	1.04	1.04	1.04	1.05	1.04	1.05
ANGELO STATE U	1.05	1.05	1.04	1.04	1.05	1.05	1.04
EAST TEXAS STATE	1.06	1.07	1.07	1.08	1.08	1.07	1.09
LAMAR UNIVERSITY	1.08	1.09	1.09	1.09	1.09	1.09	1.09
MIDWESTERN STATE	1.09	1.09	1.09	1.11	1.09	1.10	1.10
NORTH TEXAS STATE	1.16	1.17	1.18	1.20	1.21	1.18	1.22
PAN AMERICAN U	1.02	1.02	1.02	1.03	1.03	1.03	1.04
SAM HOUSTON STATE	1.05	1.05	1.05	1.06	1.06	1.05	1.07
SOUTHWEST TX STATE	1.02	1.03	1.03	1.03	1.04	1.03	1.04
STEPHEN F AUSTIN	1.01	1.01	1.01	1.02	1.02	1.02	1.02
SUL ROSS STATE	1.13	1.12	1.12	1.11	1.11	1.12	1.11
PRAIRIE VIEW A&M	1.14	1.18	1.19	1.16	1.19	1.17	1.19
TARLETON STATE	1.03	1.04	1.06	1.07	1.06	1.05	1.08
TEXAS A&I UNIV	1.12	1.13	1.12	1.09	1.08	1.11	1.08
TEXAS SOUTHERN U	1.40	1.55	1.65	1.57	1.50	1.53	1.61
TEXAS TECH UNIV	1.09	1.10	1.10	1.11	1.12	1.10	1.13
TEXAS WOMAN'S UNIV	1.19	1.19	1.20	1.22	1.23	1.21	1.24
U HOUSTON/UNV PARK	1.15	1.14	1.15	1.17	1.17	1.16	1.17
U TEXAS ARLINGTON	1.12	1.14	1.13	1.15	1.16	1.14	1.17
UNIV TEXAS/AUSTIN	1.13	1.15	1.16	1.19	1.22	1.17	1.23
UNIV TEXAS/EL PASO	1.10	1.12	1.13	1.14	1.15	1.13	1.17
WEST TEXAS STATE	1.08	1.08	1.09	1.09	1.10	1.09	1.11
LAREDO STATE	1.02	1.05	1.07	1.08	1.13	1.07	1.15
UNIV TEXAS/DALLAS	1.10	1.12	1.14	1.14	1.14	1.13	1.16
UNIV TEXAS/PERMIAN	1.06	1.06	1.08	1.09	1.09	1.08	1.10
U TEX SAN ANTONIO	1.02	1.02	1.02	1.02	1.02	1.02	1.02
TAMU/GALVESTON	1.34	1.41	1.57	1.74	1.75	1.56	1.90
TEXAS A&M UNIV	1.13	1.15	1.17	1.18	1.19	1.17	1.21
CORPUS CHRISTI S U	1.01	1.02	1.02	1.01	1.02	1.01	1.02
U HOUSTON CLR LAKE	1.03	1.03	1.08	1.11	1.10	1.07	1.14
U HOUSTON/DOWNTOWN	1.10	1.07	1.10	1.09	1.23	1.12	1.20
U HOUSTON/VICTORIA	1.01	1.02	1.02	1.02	1.04	1.02	1.04
UNIV TEXAS/TYLER	1.02	1.03	1.02	1.02	1.02	1.02	1.02
ALL INSTITUTIONS	1.10	1.11	1.12	1.13	1.14	1.12	1.15

Table 11
Senior College Total Enrollment For 1983
Alternative Forecasts

University	82 Rate 82 Ratio	82 Rate Avg Ratio	82 Rate Trnd Ratio	Trnd Rate Avg Ratio	Trnd Rate Trnd Ratio
Angelo State	5,778	5,779	5,754	5,949	5,922
Corpus Christi State	3,311	3,303	3,314	3,271	3,283
East Texas State	7,797	7,728	7,860	7,146	7,267
ETSU/Texarkana	1,153	1,118	1,151	1,165	1,200
Lamar	12,243	12,200	12,267	12,606	12,655
Lamar/Orange	971	983	969	975	961
Lamar/Port Arthur	1,197	1,185	1,195	1,245	1,256
Laredo State	936	885	947	828	886
Midwestern State	4,679	4,685	4,715	4,763	4,794
North Texas State	18,734	18,369	18,939	17,764	18,315
Pan American	8,205	8,162	8,237	7,989	8,063
Pan Am/Brownsville	1,019	1,014	1,018	951	955
Prairie View A&M	4,465	4,399	4,482	4,414	4,497
Sam Houston State	10,390	10,313	10,421	9,896	9,999
Southwest Texas State	16,554	16,460	16,608	16,156	16,302
Stephen F. Austin State	11,883	11,809	11,886	11,820	11,897
Sul Ross State	1,804	1,814	1,797	1,820	1,803
Sul Ross/Uvalde	481	481	479	458	457
Tarleton State	4,238	4,200	4,312	4,248	4,361
Texas A&I	5,242	5,373	5,212	4,955	4,808
Texas A&M	36,230	35,399	36,752	36,408	37,800
TAMU/Galveston	561	501	612	480	586
Texas Southern	8,387	8,556	8,956	7,597	7,952
Texas Tech	22,853	22,434	22,950	22,667	23,187
Texas Woman's	7,733	7,555	7,758	7,162	7,353
UT - Arlington	22,384	21,930	22,461	22,704	23,253
UT - Austin	48,532	46,606	49,168	47,733	50,357
UT - Dallas	7,461	7,357	7,558	7,653	7,863
UT - El Paso	15,302	15,021	15,482	14,658	15,108
UT - Permian Basin	1,849	1,829	1,866	1,791	1,828
UT - San Antonio	11,438	11,448	11,419	12,009	11,979
UT - Tyler	2,690	2,696	2,682	2,614	2,503
U of H - University Park	31,089	30,807	31,280	29,343	29,794
U of H - Clear Lake	6,759	6,576	6,990	6,293	6,690
U of H - Downtown	6,451	5,891	6,317	6,216	6,666
U of H - Victoria	812	799	814	852	869
West Texas State	6,791	6,697	6,801	6,772	6,876
All Public Senior	359,548	353,692	362,307	350,342	358,874

SELECTION OF "BEST FIT" ALTERNATIVE: When the forecasts indicated in this Study Paper were made, preliminary Fall 1983 total headcount enrollment was available for each institution. However, specific enrollment data by age group and county were not yet verified. Therefore, the last year of age specific enrollment by county used in the data base was for Fall 1982. The alternative enrollments for 1983, shown in Table 11 were not influenced by Fall 1983 actual enrollment. For each institution, the five alternatives were analyzed with respect to compatibility with the five-year enrollment pattern and the degree to which they were representative of actual 1983 enrollment. The alternative which seem to fit best into the actual enrollment patterns was selected. Table 12 shows the preliminary 1983 enrollment for each institution and the selected "best fit" alternative.

USING THE "BEST FIT" ALTERNATIVE TO FORECAST 1985, 1990, and 1995 ENROLLMENT: Once the "best fit" alternative was selected for an institution, the age specific enrollment rates, by county, associated with that alternative were multiplied by the corresponding age group/county population for each future year to produce forecasted in-state enrollments. These forecasted in-state enrollments were then multiplied by the ratio between total and in-state enrollment to account for out-of-state and foreign students. This process produced a base-line forecast.

However, before accepting this base-line forecast as final, it was necessary to adjust for error or misrepresentation between the 1983 "best fit" forecast and the actual enrollment pattern. In most cases this involved determining a simple adjustment ratio based on the difference between the 1983 actual enrollment and the forecasted "best fit" 1983 enrollment. In a few cases it was necessary to modify the adjustment ratio based on actual enrollment performance over the last five years to produce a more realistic 1985 forecast. Factors used for adjustment are listed in Table 12.

Table 12
Preliminary Fall 1983 Enrollment Compared to "Best Fit"
Alternative and Adjustment Factors for Senior Institutions

University	Preliminary 1983 Enrollment	Selected Alternative	1983 Forecast	Difference From Actual	Adjustment Factor
Angelo State	6,345	Trend rate/Average ratio	5,949	- 396	1.12
Corpus Christi State	3,567	82 rate/Trend ratio	3,314	- 253	1.08
East Texas State	7,578	82 rate/Average ratio	7,728	- 150	.98
ETSU/Texarkana	1,112	82 rate/Average ratio	1,118	+ 6	1.00
Lamar	13,274	Trend rate/Trend ratio	12,655	- 619	1.10
Lamar/Orange	1,064	82 rate/Average ratio	983	- 81	1.08
Lamar/Port Arthur	1,433	Trend rate/Trend ratio	1,256	- 177	1.14
Laredo State	932	82 rate/82 ratio	936	+ 4	1.00
Midwestern State	5,003	Trend rate/Trend ratio	4,794	- 239	1.14
North Texas State	20,368	82 rate/Trend ratio	18,939	-1,429	1.08
Pan American	8,594	82 rate/Trend ratio	8,237	- 357	1.00
Pan Am/Brownsville	1,079	82 rate/82 ratio	1,019	- 60	1.06
Prairie View A&M	4,425	Trend rate/Average ratio	4,414	- 11	1.00
Sam Houston State	10,580	82 rate/Trend ratio	10,421	- 159	1.01
Southwest Texas State	18,317	82 rate/Trend ratio	16,608	-1,709	1.10
Stephen F. Austin State	12,446	Trend rate/Trend ratio	11,897	- 549	1.05
Sul Ross State	1,917	Trend rate/Average ratio	1,820	- 97	1.05
Sul Ross/Uvalde	531	82 rate/82 ratio	481	- 50	1.10
Tarleton State	4,606	Trend rate/Trend ratio	4,361	- 245	1.06
Texas A&I	5,524	82 rate/Average ratio	5,373	- 151	1.03
Texas A&M	36,846	82 rate/Trend ratio	36,752	- 94	1.00
TAMU/Galveston	554	82 rate/82 ratio	561	+ 7	.99
Texas Southern	8,881	82 rate/Trend ratio	8,956	+ 75	.99
Texas Tech	23,755	Trend rate/Trend ratio	23,187	- 568	1.05
Texas Woman's	8,453	82 rate/Trend ratio	7,758	- 695	1.05
UT - Arlington	23,172	Trend rate/Trend ratio	23,253	+ 81	1.07
UT - Austin	47,573	Trend rate/Average ratio	47,733	+ 160	.99
UT - Dallas	7,456	82 rate/82 ratio	7,461	+ 5	1.00
UT - El Paso	15,241	Trend rate/Trend ratio	15,108	- 61	1.00
UT - Permian Basin	1,975	82 rate/Trend ratio	1,866	- 109	1.06
UT - San Antonio	11,890	Trend rate/Trend ratio	11,979	+ 89	1.07
UT - Tyler	3,148	82 rate/Average ratio	2,696	- 452	1.17
U of H - University Park	31,114	82 rate/82 ratio	31,089	- 25	1.00
U of H - Clear Lake	6,498	82 rate/Average ratio	6,575	+ 78	.99
U of H - Downtown	6,330	82 rate/Trend ratio	6,317	- 13	1.00
U of H - Victoria	938	Trend rate/Trend ratio	869	- 69	1.08
West Texas State	6,823	82 rate/82 ratio	6,791	- 32	1.01
All Public Senior	369,472	82 rate/Trend ratio	362,307	-7,165	1.02

PUBLIC JUNIOR/COMMUNITY COLLEGE FORECASTS

CONCEPT: An aggregate forecast of fall headcount enrollment in semester-length courses was made for the public community colleges. No forecasts were made for individual institutions. In general, the forecast procedure followed that used for the public senior universities.

HISTORICAL ENROLLMENT: An example of statewide enrollment for all public community colleges is shown in Table 13. The same informnation was available for each of the 254 counties.

Table 13
Community College Fall Headcount Enrollment

Year	In-state Enrollment by Age Groups 15-19	20-24	25-29	30-34	35-up	15-up*	Total* Enrollment
1978	60,184	59,520	37,210	24,703	38,965	220,582	232,974
1979	63,652	62,259	37,370	24,845	38,734	226,860	239,136
1980	66,371	65,155	39,142	25,964	41,726	238,358	251,076
1981	67,589	68,175	41,462	27,390	43,246	247,862	261,075
1982	72,952	76,029	46,667	29,907	49,058	274,613	293,108

* Includes in-state, foreign, and out-of-state students.

ENROLLMENT RATES: The five-year (1978-82) in-state enrollment data base and population data base were used to obtain enrollment rates by county and age groups for all public junior/community colleges combined. Two alternative rates were calculated as follows:

1982 Rate: The number of students in a specific age group from each county attending a public junior/community college divided by the total number of people of the specific age group estimated for the county in 1982.

Trend Rate: Five years of enrollment data (1978-82) were used to determine the straight line arithmetic trend for 1983 enrollment for all public junior/community colleges for each county and age group using the equation:

$$Y_c = a + bx$$

where: a is the mean enrollment over the five-year period, b is the deviation from the center year multiplied by the enrollment and divided by the sum of the squares of the deviations, x = +3, the value of the deviation for the year 1983.

The predicted trend enrollment (Y_c) for 1983 was then divided by the total number of people of the specific age group projected for the county in 1983.

An example of these enrollment rates is shown in Table 14 for Harris County. Similar rates were also computed for all 254 Texas counties.

Table 14
Community College Enrollment Rates for
Harris County

Alternative	Age 15-19	Age 20-24	Age 25-29	Age 30-34	Age 35-up	Age 15-up
1982 Rates	.04883	.04883	.02903	.02121	.00859	.02300
Trend Rates	.04756	.05091	.02945	.02118	.00877	.02348

IN-STATE ENROLLMENT FORECAST: Enrollment rates previously computed and population projections were used to forecast in-state enrollment for all public junior/community colleges as follows:

- The age specific enrollment rate for each county was multiplied by the corresponding age group population projected for each county. This produced the number of students by age and county expected to attend a public junior/community college. Age group enrollment forecasts were summed by county. (See Table 15 for an example.)

- These county totals were summed to obtain an overall in-state enrollment forecast.

Table 15
Forecast of Community College Enrollment from
Harris County in 1983

Based on	Age 15-19	Age 20-24	Age 25-29	Age 30-34	Age 35-up	Age 15-up
1982 Rates	10,722	13,046	8,671	5,556	8,061	46,056
Trend Rates	10,443	13,601	8,796	5,548	8,229	46,617

Two alternative in-state enrollment forecasts were produced--one for each of the enrollment rates. Overall 1983 in-state enrollment forecasts are shown in Table 16.

Table 16
Community College In-State Enrollment for 1983
Alternative Forecasts

	Based on 1982 Rate	Based on Trend Rate
Total In-State Enrollment	278,622	281,198

RATIOS: IN-STATE ENROLLMENT TO TOTAL ENROLLMENT: Students who are residents of Texas account for approximately 94 percent of the total enrollment at the public junior/community colleges. However, this ratio has varied slightly from year to year. In order to include out-of-state and foreign students in the total enrollment forecasts, factors were computed by dividing total enrollment by in-state enrollment. The results are shown in Table 17 for each of the five years of historical enrollment, the five-year average and the five-year trend ratios.

Table 17
Community College Alternative Factors:
Ratio of Total to In-State Enrollment

1978 Ratio	1.07
1979 Ratio	1.05
1980 Ratio	1.05
1981 Ratio	1.05
1982 Ratio	1.07
Average Ratio	1.06
Trend Ratio	1.06

TRIAL 1983 TOTAL ENROLLMENT FORECASTS: Alternative total enrollment forecasts were computed by multiplying combinations of in-state enrollments (produced by the alternative rates) by the alternative ratios. Four combinations were selected, as shown in Table 18.

Table 18
Community College Total Enrollment for 1983
Alternative Forecasts

Alternative	1983 Total Enrollment
1982 Rate/1982 Ratio	298,126
1982 Rate/Trend Ratio	295,340
Trend Rate/1982 Ratio	300,882
Trend Rate/Trend Ratio	297,184

SELECTION OF "BEST FIT" ALTERNATIVE: When the forecasts indicated in this Study Paper were made, preliminary Fall 1983 total headcount enrollment was available for the public junior/community colleges. However, specific enrollment data by age group and county were not yet verified. Therefore, the last year of age specific enrollment by county used in the data base was for Fall 1982. The alternative enrollments for 1983, shown in Table 18, were not influenced by fall 1983 actual enrollment. The four alternatives were analyzed with respect to compatibility with the five-year enrollment pattern and the degree to which they represented actual 1983 enrollment. The alternative which seemed to fit best into the actual enrollment pattern was selected. Table 19 shows the preliminary 1983 enrollment and the selected "best fit" alternative.

Table 19
Preliminary Fall 1983 Enrollment Compared to
"Best Fit" Alternative--Community Colleges

Preliminary 1983 Enrollment	Selected Alternative	1983 Forecast	Difference From Actual
306,597	Trend rate/82 ratio	300,882	5,715

USING THE "BEST FIT" ALTERNATIVE TO FORECAST 1985, 1990 AND 1995 ENROLLMENT: Once the "best fit" alternative was selected, the age specific enrollment rates, by county, associated with that alternative were multiplied by the projected corresponding age group/county population for each future year. The forecasted in-state enrollment was then multiplied by the ratio associated with the selected alternative to produce total enrollment forecasted by the "best fit" alternative.

Before the forecasted enrollment was finished, one other procedure was followed. The difference between 1983 enrollment produced by the "best fit" and the actual 1983 enrollment was examined. In the case of the combined enrollment for public junior/community colleges, the preliminary fall 1983 enrollment was considered to be in line with past enrollment patterns. Therefore, an adjustment factor of 1.02 (306,597 divided by 300,882) was applied to the enrollments produced by the "best fit" forecasts.

SUMMARY OF FORECASTING PROCEDURES FOR TEXAS INDEPENDENT SENIOR COLLEGES AND UNIVERSITIES

Forecasts of total enrollment for the independent colleges and univerities (senior and junior) were obtained by first determining the historical correlation between independent and public senior college total enrollments for the six-year period 1978-1983. After public senior college enrollment had been forecast by the methodology previously described, a regression equation was established to predict the independent institutions' total enrollment.

Observed data for the years 1978-1983 were used to develop the following equation:

$$Y_i = 78,345 + .138\ (X_i - 344,299)$$

Where:

Y_i is the predicted value of independent institutions' enrollment

X_i is the predicted value of public senior college enrollment

Note: 78,345 is the mean of the observed values of independent enrollment, and 344,299 is the mean of the observed values of public enrollment during the period 1978-1983.

By a similar procedure of correlating historical enrollments, separate forecasts were obtained for independent senior and independent junior institutions. The resulting forecasts for 1985, 1990 and 1995 are shown in Table 1.

SUMMARY OF FORECASTING PROCEDURES FOR THE TEXAS STATE TECHNICAL INSTITUTE (TSTI)

Forecasts of total enrollment for the four campuses of the Texas State Technical Institute were obtained by first determining the historical correlation between TSTI and the vocational-technical program enrollment in community colleges for the six-year period 1978-1983. After community college enrollment had been forecast by the methodology previously described, a correlation analysis was used to predict the portion of total enrollment allocated for vocational-technical students. Using historical and predicted vocational-technical enrollment, a regression equation was established to predict the total Texas State Technical Institute enrollment.

Observed data for the years 1978-1983 were used to develop the following equation:

$$Y_i = 7,224 + .107 (X_i - 87,059)$$

Where:

Y_i is the predicted value of TSTI enrollment

X_i is the predicted value of the vocational-technical portion of community college enrollment

Note: 7,224 is the mean of the observed values of TSTI enrollment, and 87,059 is the mean of the observed values of community college vocational-technical enrollment during the period 1978-1983.

The resulting forecasts for 1985, 1990 and 1995 are shown in Table 1.